BROMELIAD SOCIETY OF GREATER CHICAGO

THE BSGC NEWS

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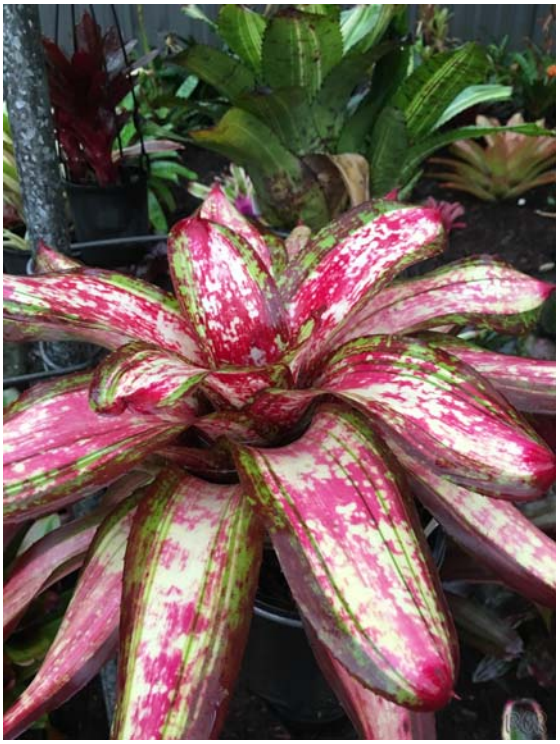
Neoregelia 'Christmas Colours' photo by R Smythe

From www.fcbs.org



Neoregelia 'Christmas Lights'
from registry.bsi.org

President's Column

Well these are certainly strange times we're living in now! I hope you and your families are safe and sound. I know celebrating from afar is difficult.

I hope you're all enjoying your plants inside and that they're enjoying you too. Remember to keep them moist as all this hot air is sure to be drying them out.

Christmas will be here soon, I hope all of you find a way to enjoy the holidays.

I want to give a big thank you to Martha and Steve for all the work they do for the club! They are the best!

Lori Weigerding

I found this article about plants and winter weather in the March 2020 Central Arizona Cactus & Succulent Society Newsletter.

ALTERING MICROCLIMATES DURING WINTER

By Kim Andrews

Understanding our microclimates helps us work with the conditions we have and create conditions that will benefit our plants. This term refers to areas as small as a few square feet or as large as many square miles. Microclimates vary enough that the sun exposure, temperature or wind conditions may differ in one area to another in our garden or yard. As both gardeners and plant collectors we understand the importance of the right plant in the right place, but we also want plants that challenge us. In order to do this, we manipulate the plant's microenvironment.

Altering a plant's microclimate is easier for a potted plant because it can be moved. Hopefully, we have the right plant in the right place planted in the ground that accepts its seasonal exposures, but if we do not, we can alter its microclimate with shade cloth and irrigation.

Weather indicators are predictions of what may occur throughout a large area. We need to adjust these predictions with our knowledge of the specific environmental conditions that affect our plants where they reside. Deviations in environmental conditions create microclimates based on numerous factors, such as elevation, slope, sun exposure, structure density, windbreaks, and temperature variances.

Elevation: The elevation difference from the weather reporting station to your location impacts its actual temperature. Generally, air temperature decreases from 3-5°F for each one thousand-foot increase in altitude. Therefore, the higher the elevation of your garden, the more likely your plants will have cooler temperatures.

Slope: Cold air is heavier than warm air and sinks to lower areas causing warm air to rise. Check your landscape for dew or frost in the early morning when the temperature is approximately 32°F to identify the cooler ground areas. Slopes or higher ground may offer some protection from the coldest air being trapped in low spots or valleys. Succulents in swales are more at risk than those atop the berm. Above-ground gardens on rooftops, balconies or hanging baskets may benefit from their position above the cold air pockets at ground level.

Plants in dormancy require less water. Use of a slope or a berm can improve drainage but be aware of moisture collecting at its lowest level if plants are there.

Sun Exposure: A garden on a south-facing slope gains more exposure to the sun than the north-facing slope. The same is true for structures where cold air can pool on the north side.

Structure Density: An urban heat island is a metropolitan area that is significantly warmer than its surrounding rural areas due to structures and pavement radiating heat in conjunction with human activity. This temperature difference is usually greater at CACSS of 10 14 March 2020 night than during the day, most apparent when winds are weak and most noticeable during the summer and winter.

Heat Retention: Concrete, rocks, soil and other materials absorb warmth from the sun during the day and radiate it slowly at night. The materials at ground level may be a few degrees warmer than the surrounding night air preventing the condensation of dew or frost from forming. Plants positioned against a sun-facing wall or on a sun-drenched patio will experience higher temperatures at night than plants in the open yard.

Heat escapes more quickly when there is no cloud cover to capture it. Trees and patio roofs slow the escape of the radiant heat from the surface below. When the air is dry, moisture in the soil evaporates removing some its heat.

Wind: Reducing the wind speed reduces the evaporative loss in the soil and plants. Wind speeds and flows are altered by structures or plants that can create either turbulence or reduce the wind's impact. Solid structures, walls and fences may create turbulence by the wind blowing over the top and dropping downward onto the other side with a force. Windscreens allows some air to filter through diffusing the wind and weakening its strength. A lattice, louvered fence or a row of trees and shrubs across the wind's direction can deflect the wind reducing the speed by 30-60% on the leeward side without producing the turbulence.

Temperatures: Meteorologists predict the probability of weather conditions for a specified area based on data from instruments. However, temperatures vary greatly across

a large metropolitan area. Both the meteorological and most home thermometers are placed 4-6 feet above the ground. By placing a thermometer at the same level as your plants, you will learn the difference in temperature between the weather forecast and what your plants are actually experiencing.

Frost does occur at temperatures predicted to be above 32°F. Knowing the air temperature is higher at 4-6 feet than at ground level, the National Weather Service uses 36°F and below as its guideline for posting a possible frost alert. Frost is a thin layer of ice crystals formed from water vapor on a solid surface as it cools to a temperature below 32°F AND is colder than the dew point of the air. Plant moisture evapotranspires from its surface causing the dew point to be higher over vegetated surfaces. Dew or frost will form on vegetation first before forming on surrounding materials and the soil.

In order to optimize a plant's growth, we need to identify and assess our microclimates before manipulating them. Seasonally observe and note whether it is in a low or high spot, the sun exposure, the surrounding structures and materials retaining heat, overhead coverings, the wind flows, and the temperature difference at the plant's soil level. Each season will bring changes to each microclimate.

Next, group your plants with similar environmental needs. Match each group's needs to the microclimate that best fits their needs. If you are like me, some plants fit nicely into CACSS of 11 14 March 2020 an existing microclimate and some do not. Using the information above, let's see how we can manipulate the microclimate for those without a suitable fit. Lower temperatures and rain causing soggy soil are major winter threats.

Grouping my plants with similar temperature and water needs organizes my winter protection plan. I use colorful plant labels to identify temperature groupings of 41-50°F, 31-40°F, 25-30°F, and <25°F. As temperatures fall below 60°F most succulent growth slows into the survival mode of dormancy with extreme cold causing death. Some cactus can survive sub-freezing temperatures for months while many tropical plants do not do well in temperatures below 50°F. Even plants within a genus can vary, for example some *Agaves* survive at 10°F while others die at 30°F. Numerous websites and books provide information on the lowest temperature each plant can tolerate.

Several methods may be used to capture radiant heat to increase the night air temperatures by 2-4°F depending on the materials used and their thickness. Make use of row covers, cold frames, cloches, old sheets, paper bags, or clear plastic containers to protect plants at night and remove them to expose both the plants and the soil to the sun in the daylight. Many items primarily sold for frost protection can be used any time of year to increase temperatures. However, most frost materials have limitations of only slightly increasing temperatures which is not enough to protect a tropical plant to survive a 32°F frost. When plastic is used, never allow it to touch plant tissue.

Small, single plants may be protected with clear plastic bottles as a plant cover or cloche. Simply remove the bottom and place the top portion over the plant with the cap on at night and remove the cap or bottle during the day. Keep the bottle from blowing away by pushing them into the soil or holding them in place with a small stake. If only the growth points of your cactus arms need protection, use Styrofoam cups or the cute elf caps.

Potted plants are more susceptible to the cold because they are not insulated as well as plants in the ground. Move smaller pots indoors or under a cover. If the planter is too big to move, wrap the pot in bubble wrap and cover entire plant including the pot to ground to hold in its radiant heat.

For capturing radiant heat to be successful, drape the material loosely over the plant to allow for air circulation and seal all edges to the ground to prevent heat from escaping. Remove the covering during the day when temperatures reach a safe level for this group of plants in order for the sun to reheat the soil and other surface material. To increase the temperature further, use several one-gallon jugs of hot water under the covering. Water retains and radiates heat longer than soil due to its hydrogen bonds causing slower cooling. Place a thermometer inside to monitor the temperature. It is best to cover your plants in the later part of the day in the daylight when you can see what you are doing.

I received the booklet "Bromeliaceae A Layman's Guide to the Bromeliad Family and Genera" compiled by Drew Maywald and edited by Ross Little in July 2020. They are both with the Far North Coast Bromeliad Society Group.

Drew is a new collector of Bromeliads and thought it would be helpful to describe the genera and sub-families using layman's terms. They are currently mostly based on DNA studies.

I will cover the Bromeliodeae in this Newsletter.

The first is Acanthostachys which has two known species Acanthostachys pitcairinioides and Acanthostachys strobilacea. It has cascading spiny leaves.

Acanthostachys strobilacea
from florapix.nl

There are currently 244 species of Aechmeas. There is a wide variety of color, foliage and growth habits. They have small root systems. Many have sharp spiney leaves.

There are three species of Ananas and one variety as well as many cultivars. The pineapple is the most economically grown Bromeliad.

Androlepis skinneri
From florapix.nl
Picture taken by Ruud de Block

There are only two species of Androlepsis, skinneri and fragrans. They are native to central america and southern Mexico.

Araeococcus parviflorus
From florapix.nl
Photographer: Rick Martin

Areococcus has ten species. It grows as an epiphyte. It has thin whip like leaves with a bulbous base.

Billbergia is a popular genus usually epiphytic with stunning flowers which only last a few days. Too much fertilizer can turn the beautiful foliage green. Helicoidea was previously a subgenera of Bilbergia but now they are included in the Billbergia genus.

Bromelia was named by Linnaeus in 1737. There are 70 species and two cultivars.

Both pictures are
Bromelia agavifolia
from florapix.nl

Photographer: Peter Tristram

Canistropsis has 11 species and are found in the Atlantic forest in southeastern Brazil. They enjoy shade and moisture. Previously, they were in the Nidularium genus. They take the same care as Vriesea and Guzmania.

Canistropsis bilbergioides
Photographer: Ruud de Block

Canistrum are also found in the Atlantic forest in southeastern Brazil. There are 13 species. It was named for a basket carried on the head. They also like shade and moisture. It has a flat topped inflorescence which rises above the leaves.

Canistrum triangulare
Photographer: Bert Westerman

Cryptanthus which are commonly called “Earth Stars” because of their flat form and symmetrical pattern. The roots grow the same size as the foliage. They should be fertilized often with a diluted balanced ferilizer. They prefer indirect light.

Deinacanthon means terrible flower or spines. There is only one species and it comes from Northern Argentina and Paraguay. The upper spiny leaves grow in one direction and the lower half grow in the opposite direction. The flowers are very foul smelling Wild pigs and foxes eat the fruit.

From fcbs.org

Disteganthus are primitive bromeliads found in terrestrial environments in north eastern South America. There are four species.

From fcbs.org
Photo taken by Eric Gouda who runs FloraPix.nl

Edmundoa was earlier grouped with Canistrum. There are three species and three cultivars.

Edmundoa lindenii var rosea
Photographer: Uwe
From FloraPix.nl

Eduandrea has one genus, Eduandrea selloana. It was formerly Andrea but that was ruled invalid It is an endangered species in the state of Bahia in Brazil.

Eduandrea selloana
From the 2008 article in the Journal of the BSI

Fascicularia was named by Mez in 1891 from the latin which describes the flowers which grow in bundles. One species which came from Chile is Fascicularia bicolor. These have been naturalized in France and Great Britain. They are mostly terrestrial and grow on rocks. When they flower, the leaves turn red at the center of the plant. (FloraPix.nl picture)

Fascicularia bicolor
Photographer: Jeroen van der Steen

Fernsea has two species both endemic to Brazil, bocainensis and itatiaiae. They are small drought tolerant plants, narrow heavily spined leaves'.

Fernsea bocainensis
Photographer: Peter Bak

Greigia is named after a Major General Greig, who was president of the Russian Horticultural Society in 1865. They are like puyas with a lateral inflorescence. They continue to bloom from the same rosette every year. There are 36 species.

From FCBS.Org

Hohenbergia has 49 species. Formerly it had two subgenera. The Wittmackiopsis has been transferred to the genus Wittmackia.

In the next Newsletter, I will finish with the Bromeliodeae.

I think this is an excellent booklet on the genera. I especially like having the pictures next to the genus name and Drew listed who the genus was named for. Also, it is not as technical as many of the other articles and books that cover the different genus.

In November, I received a request from Anne-Marie in Indiana to identify an Aechmea. I forwarded it to people who also forwarded the picture and they believe it to be Aechmea 'Covata Too'.

Steve found a very intersting article, "The Rare Plants that Bleed Nickel" by Dyna Rochmyaningsih. Here is the link https://www.bbc.com/future/article/20200825-indonesia-the-plants-that-mine-poisonous-metals

Anne sent us this picture of her tillandsia funckiana in October.

We all hope next year will be a Happy New Year and we will have Happy Days again. (Hopefully have a meeting!)

Neoregelia 'Happy Days' photo by W Paterson

From registry.bsi.org